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Claims

1. Method for noninvasive measurement of an internal pressure in elastic vessels in which a force is measured on the outer surface of the vessel and the internal pressure is ascertained with the aid of a difference from the measured force and a relaxation profile estimated in advance, characterized in that the relaxation profile is repeatedly checked after the start of the measurement.

2. Method according to Claim 1, characterized in that the relaxation profile is ascertained with the aid of an averaging method.

3. Method according to Claim 2, characterized in that an averaging is done in at least two different ways which differ in their smoothing width.

4. Method according to Claim 3, characterized in that a difference of the averages is continuously formed with differing smoothing widths.

5. Method according to one of Claims 2-4, characterized in that a periodicity of the measured force is ascertained and a window width of the averaging is matched to the window width at least from time to time.

6. Method according to one of Claims 1-5, characterized in that a first limit is continually formed, resulting from the fact that the relaxation profile decreases monotonically, and a second limit, resulting from the fact that the slope of the relaxation profile decreases, and a change of the internal pressure is recognized when the relaxation profile exceeds one of the two limits.

7. Method according to one of Claims 1-6, characterized in that support points are repeatedly determined in order to predict the relaxation profile.

8. Method according to Claim 7, characterized in that the support points are determined at predetermined points in time in an initialization phase and, in a measurement phase, after a predetermined change of the predicted relaxation profile.

9. Method according to Claim 7 or 8, characterized in that the support points are not ascertained as long as a change of the internal pressure is recognized.

10. Method according to one of Claims 7-9, characterized in that the relaxation profile is predicted on the basis of the support points with the aid of a nonlinear optimization method.

11. Method according to Claim 10, characterized in that the prediction is support-point-controlled in the initialization phase and time-controlled in the measurement phase.

12. Method according to Claim 10 or 11, characterized in that a predetermined number of the most recently ascertained support points are used for optimization.

13. Method according to one of Claims 7-12, characterized in that the relaxation profile is predicted on the basis of the support points with the aid of a mathematical model of the tube.